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To: C. Ellis

Date: October 1, 1990

From: K. A. Cox

Subject: Abstract of the Optical Processing Program Presentation Given at the September R&D Planning Meeting

The current focus of the optical processing program is on the development of three types of inspection systems. These systems are being developed for the on-line inspection of cigarette packs, the on-line inspection of print web at the printer and the off-line inspection of printed materials at the printer and within the QA Department. The status and plans for these development efforts were reviewed.

Pack Inspection

The pack inspection system under development (OSIRIS) is based on proprietary inspection algorithms developed as part of the program. The U.S. Patent Office has issued a Notice of Allowance on the first patent application protecting these algorithms. A patent will issue in 3-5 months. Further protection of these algorithms and the unique inspection procedure is being pursued through the filing of three additional patent applications. The development of the factory prototype pack inspection system is now well underway. The detailed system specifications have been developed, the hardware has been received and integrated and 30% of the coding completed. Several display screens were shown to illustrate a number of the system features and its ease of use. The software development is scheduled for completion on November 30, 1990. Laboratory evaluation and debugging will take place in December and a factory trial at Stockton Street will immediately follow.

On-line Web Inspection

The development of an on-line print web inspection system was initiated in the second quarter of this year. The system will initially be installed at Colonial Heights Packaging (CHP). The performance specifications for the system have been developed with the assistance of CHP personnel. An image acquisition rate 40 times greater than that of the pack inspection system is required to satisfy the performance specifications. A review of available technology relevant to this application has been completed. No commercial solutions were found. The most promising technology identified is under development by Electronic Technology in Imaging (ETI) in conjunction with Dupont. A single camera laboratory web inspection system based on ETI hardware will be developed in Q4 '90. This system will be used to evaluate cameras, lighting systems and proposed inspection algorithms. The information provided by this system will be used to design a factory prototype web inspection system. The design will be initiated by the end of Q4 '90.

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Resources

The resource projections for the upcoming quarter show increased support from both the IS and Engineering Departments (1 and .5, respectively). Within R&D, the program is supported by the Vision Inspection Technologies project in the Physical Research Division (6), the Computer Applications Division (1) and Development Engineering (.5).

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